NATURAL RESOURCES CONSERVATION SERVICE
CONSTRUCTION SPECIFICATION

IA-657 WETLAND RESTORATION, ENHANCEMENT OR CREATION

1. SCOPE

The work shall consist of activities involved with restoring, creating or enhancing wetlands.

2. GENERAL

Construction activities shall be carried out so that the wetland area shall be disturbed as little as possible. Existing naturally vegetated spillway areas shall not be disturbed.

3. ENVIRONMENT

Construction operations shall be carried out in such a manner that air and water pollution and erosion shall be minimized and held within legal limits. See Iowa Construction Specification IA-5, Pollution Control.

4. SUBSURFACE DRAIN PLUGGING OR REMOVAL

Subsurface drains shall be removed as shown on the plans. All envelope, filter material or other flow enhancing material shall be removed. The trench shall be backfilled in 12 inch layers and compacted with similar soil to obtain a density of not less than the adjacent natural soils.

The ends of the abandoned and disconnected drains shall be blocked with manufactured caps or plugs or with concrete.

Any additional subsurface drains located during construction shall be brought to the attention of the landowner and the Natural Resources Conservation Service. For subsurface drainage alterations, the upstream drainage must be maintained at its current capacity.

5. EMBANKMENT

The foundation area shall be cleared of trees, logs, stumps, roots, brush, boulders, sod, and rubbish. Topsoil and sod shall be stripped to a depth of six inches, stockpiled and spread on the completed earthfill. Foundation surfaces shall be sloped no steeper than 1:1 unless shown otherwise on the drawings. The foundation area shall be thoroughly scarified before placing fill material.

All trees and shrubs shall be cleared and grubbed within a minimum distance of 10 feet from an embankment or any spillway.

The cutoff trench and any other required excavations shall be dug to the lines and grades shown on the drawings or as staked in the field. Structure or trench excavations will conform to all safety requirements of OSHA.

Suitable excavated materials may be used in the permanent fill. All surplus or waste material shall be disposed of in areas shown on the drawings or as approved by the NRCS Inspector. The waste material shall be smoothed and sloped to provide drainage.

Borrow should not be taken from the wetland area within 10 feet of the embankment or as shown on the plans.

Fill material shall be free of detrimental amounts of sod, roots, frozen soil, stones more than 6 inches in diameter, and other objectionable material. The moisture content of the fill material shall be such that a ball formed with the hands does not crack or separate when struck sharply with a pencil and will easily ribbon out between the thumb and finger. Material that is too wet shall be dried, and material that is too dry shall have water added and mixed until the requirement is met.

The placing and spreading of fill material shall be started at the lowest point of the foundation and the fill brought up in horizontal layers not to exceed 9 inches in thickness prior to compaction.

Earth fill shall be compacted by one of the following methods as specified on the plans. If no method is specified, compaction will be Method 1.

Method 1 – Earthfill shall be placed so that the wheels of the loaded, rubber tired, hauling equipment traveling in a direction parallel to the centerline of fill pass over the entire surface of the layer being placed.

Method 2 – Two (2) complete passes of a tamping-type roller will be made over each layer. The roller shall be capable of exerting a minimum of one hundred (100) pounds per square inch.

Method 3 – Minimum density shall be 90% of the maximum density as determined by ASTM D-698.

The completed work shall conform to the lines, grades, and elevations shown on the drawings or as staked in the field.

6. ISLANDS, MOUNDS AND LOAFING AREAS

Islands shall be randomly located within the wetland area at locations shown on the drawings or as staked in the field.

Orientation of island shorelines shall be random with attention given to prevailing winds to limit wave damage. In general, the side of the island with the longest dimension shall be parallel to the prevailing wind direction.

Side slopes shall be as shown on the construction drawings, but in no case shall be steeper than 6:1.

Shapes shall be irregular.

Loafing areas shall be constructed in the areas shown on the drawings or as staked in the field and shall be graded to drain runoff water.

Elevation of at least one loafing area should be above maximum water level whenever possible.

Compaction of mounds is not necessary.

All excavated material not suitable for embankments, wetland dikes, and islands can be used for mounds or blended into surrounding topography to create a natural appearance. Spoil material shall not be spread on existing wetland areas.

Organic soils shall not be used to construct islands, loafing areas, dikes or embankments.

7. WATER CONTROL STRUCTURE

The structure shall be installed to the line and grade shown on the drawings. Excavations below grade shall be corrected by backfilling and compacting by hand-operated or power equipment as specified by NRCS.

Equipment shall not be operated within 2 feet of any structure or pipe. Fill adjacent to structures, pipe conduits, and anti-seep collars shall be placed in 4 inch layers and compacted to a density equivalent to that of the surrounding fill by means of hand tamping or manually directed power tampers. Care should be taken that compaction around the spillway pipe does not cause uplift on the pipe with a resulting void beneath the pipe. Hand tamping, only, should be used to compact the fill under the bottom half of the pipe.

Conduits installed in a trench shall be bedded and backfilled throughout the width of the embankment. Broken pieces of clay tile shall be kept away from the conduit. Friable soil shall be placed in 4 inch lifts and hand tamped to a depth of 2 feet above the conduit. The sides of the remaining trench under the embankment shall be sloped no steeper than 3 horizontal to 1 vertical and backfilled meeting embankment requirements.

8. FINISH

The surface of work areas shall be smooth and present a quality appearance.

9. SEEDING AND MULCHING

A protective cover of vegetation shall be established on all exposed surfaces of the embankment, spillway, borrow area, and other areas disturbed by construction as shown on the plans or staked in the field. Seeding and mulching shall be performed in accordance with the IA-CPA-4, Seeding Plan, and Construction Specification IA-6, Seeding and Mulching for Protective Cover.

10. SPECIAL SPECIFICATIONS